

Rabies Vector Species: Regulation of Rehabilitation & Nuisance Control



D.J. O'Brien¹, T.M. Cooley¹, D.R. Etter², J. Janson², D.J. Knapp³ & K. Signs⁴
¹Wildlife Disease Lab, ²Wildlife Division & ³Law Enforcement Division, MDNR
⁴Communicable Disease Division, MDCH

Overview

- Rabies Vector Species: Authority & current regulations
 - General possession
 - Nuisance wildlife
 - Wildlife rehabilitation
- How we got here
- Status of the raccoon population
- The tinderbox: Leopold's prophecy meets public (mis)perceptions
- Future directions



Rabies Vector Species (RVS): Regulatory authority

Natural Resources and Environmental Protection Act (NREPA) [PA 451 of 1994]

- “The commission of natural resources (NRC) is created as the head of the DNR...”
[MCL Sec. 324.501(2)]
- “In managing animals, (DNR) may issue orders to ... determine conditions under which permits may be issued” [MCL Sec. 324.40107(1)(i)]



RVS: Current regulations

General possession

Captive Wild Animal Order [Section 20]



Raccoons, skunks & foxes legally defined as game animals [MCL Sec. 324.40103(1)(n),(bb) & (ee)]

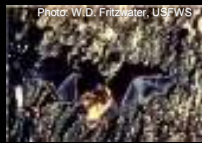
- May be possessed alive only if:
 - Have a Permit to Hold Wildlife in Captivity
 - Obtained animal from another Permit holder
 - Can prove they were not taken from the wild
- Skunks and raccoons may not be imported alive



RVS: Current regulations

General possession

Wildlife Conservation Order [Section 9.1(4)]



Bats legally defined as “protected”; can only be taken

- whenever ... involved in a bat-human or bat-domestic animal exposure to rabies ...”
- when creating a damage or nuisance problem”
- incidental to normal forest management, closure of an abandoned mine, or demolition of buildings”

Can only be held for public health reasons



RVS: Current regulations

Nuisance wildlife permits

Wildlife Conservation Order [Section 5.51 & 5.52]



“The wildlife permit specialist may issue a permit ... for taking certain animals causing damage to personal or real property”

- “...may effect control measures at any time within ...the dwelling, associated buildings, and yard”
- authorized to undertake control measures for these RVS
 - Bats that are not threatened and endangered
 - Fox
 - Raccoons
 - Skunks



RVS: Current regulations
Nuisance wildlife permits

Wildlife Conservation Order
[Section 5.52]



- “Captured animals shall not be released
 - From or on a public roadway or right of way”
 - Upon the lands of another person, whether public or private, without the consent of the land owner or manager”
- “All animals ... shall be taken and disposed of in a manner to ensure humane handling or killing”
- Can be held only for 24 hours (except for public health reasons, then longer)



RVS: Current regulations
Rehabilitation permits

Wildlife Conservation Order
[Section 5.74]



- “Captive animals shall not be allowed to come into physical contact with members of the general public, domestic animals, including livestock...”
- “Live skunks and bats shall not be possessed”



RVS: Current regulations
Rehabilitation permits

Wildlife Conservation Order
[Section 5.74]



- “All animals exhibiting an illness, disease or symptom of special concern and all animals that die of questionable illness or disease ...
- Shall be reported the same day to a veterinarian or pathologist at the ... laboratory, DNR
 - Such animals shall be possessed, handled and disposed of only as provided by the veterinarian or pathologist

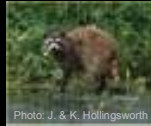
Special concerns: neuro. disorders, reportable diseases, ≥10 animals w/same signs, non-natives



RVS: Current regulations

Nuisance & rehabilitation

Wildlife Conservation Order
[Sections 5.51(7) & 5.74a(3)]



“Effective 2/1/2000, live raccoons ... shall be possessed and released only

- in the same county where captured”
- shall be isolated in a manner to prevent physical contact with animals not originating from the same county”
- Each cage shall be tagged ... with county of origin and date of capture”



RVS: Current regulations

Nuisance & rehabilitation

Wildlife Conservation Order
[Section 5.51(7) & 5.74a(3)]



“Effective 2/1/2000, live raccoons ...

- Cages and areas used to hold ... shall be ... effectively disinfected”
- If a raccoon has ... physical contact with a raccoon originating from another or unknown county..., both shall be isolated and humanely euthanized within 24 hours



RVS: Current regulations

Rehabilitation

Wildlife Conservation Order
[Section 5.74a(3)]



“Effective 2/1/2000, live raccoons ...

- If the capture point of a raccoon cannot be positively confirmed to be from a particular county, (it) shall be isolated and humanely euthanized within 24 hours of receipt



A problem with boundaries

- Current regulations presume raccoons remain in county of release, but...
- Unless released within $\frac{1}{4}$ mile of their "residence", raccoons disperse substantial distances (**mean: 6-20 mi., maximum: 183 mi.**) from their release site (Wright 1977, Rosatte and MacInnes 1989, Tabatabai and Kennedy, 1989, Mosillo et al., 1999)
- **"The rate of spread of zoonotic disease could be accelerated considerably"**

(Mosillo et al. 1999, *J. Wildl. Mgt.* 63(1):284)



How we got here

- April 1999: MI Rabies Working Group made recommendations to NRC to reduce spread of raccoon-strain rabies (RSR) and likelihood of transmission to humans in event of outbreak
- NRC considers WCO Amendment #10 of 1999:
 - Option 1: raccoons coming into possession of NWC and rehabilitators to be humanely euthanized within 24 hours
 - Option 2: raccoons from "raccoon rabies containment area" in possession of NWC/rehabbers euthanized; others released in county of origin



How we got here

- NRC considers WCO Amendment #10 of 1999:
 - Option 3: all raccoons in possession of NWC/rehabbers released only in county of origin
- NRC hearings May through December 1999
 - Affiliations of speakers supporting Option 1 (euthanasia)
 - MI Public Health Institute
 - MI Department of Community Health
 - MI Veterinary Medical Association
 - Macomb County Health Department
 - Univ. of Michigan Department of Epidemiology



How we got here

- NRC hearings May through December 1999
- Affiliations of speakers supporting Option 1 (euthanasia)
- MSU College of Veterinary Medicine
- MI Humane Society
- MI Farm Bureau
- MI United Conservation Clubs
- USDA APHIS Wildlife Services
- MI Animal Damage Control Association
- MI Association of Animal Control Officers
- MI Department of Natural Resources
- Some NWC and rehabilitation permittees



How we got here

- NRC hearings May through December 1999
- Affiliations of speakers supporting Option 3 (release in origin county)
- Fund for Animals (CT)
- Humane Society of the United States
- Citizens Against Lethal Measures
- Mid MI Society of Animal Protection
- MI Federation of Hum. Societies and Animal Advocates
- Animal Advocates of MI
- IL Wildlife Rehabilitators Association
- Some NWC and rehabilitation permittees



How we got here

- January 2000: NRC adopts current regulations as WCO Amendment #1 of 2000
- Motions & recommendations from various NR Commissioners for:
 - Euthanization of nuisance raccoons
 - Strategies addressing raccoon overpopulation
 - Euthanization if RSR identified in MI
- Amendment adopted by less than unanimous vote (<1% of votes in last 8 years not unanimous)



RVS: Future regulations
in the event of an RSR
outbreak in MI



Status of the raccoon population

(Over)Abundance

Densities

- Clinton Co., MI: ~99 /mi² rural (Ballard-Karasek, 1995)
- Northern IL: ~98-192 /mi² urban (Prange et al. 2003)
~104-233 /mi² suburban
- NY, OH, ON: ~106-862 /mi² (various, cited in Prange)
- Southeast MI: (Marks 2006)

High reproductive rates

- Northern IL: 73-85% (Prange et al. 2003)



Status of the raccoon population

(Over)Abundance

Low mortality

- Annual survival probability: 0.51-0.74 (harvested)
(PA: Brown et al. 1990; IA: Hasbrouck et al. 1992; IL: Mankin et al. 1999)
- Annual survival probability: 0.84 (non-harvested)
(TX: Gehrt and Fritzell 1999)
- Survival highest in urban and suburban populations



Status of the raccoon population



"Raccoons are abundant in most of the Midwest, and there are few, if any, places to release a translocated raccoon where there is not already a substantial population of other raccoons or people." (Mosillo et al. 1999, *J. Wildl. Mgt.* 63(1):284)



Status of the raccoon population

The price of (over)abundance

Higher risk for disease transmission (both intra- and inter-species) (Prange et al. 2003)

- High density = High rates of intraspecific contact
- Aggregated distribution (Hatten 2000)
- Stress & increased susceptibility
- Predilection for urban/suburban areas (increased contact with humans) (Prange et al. 2004)
- "Furious" rabies less common (higher human exposure from "tame" looking raccoons) (Kappus et al. 1970)



Status of the raccoon population

The price of (over)abundance

Increased nuisance damage

2000-2002, 489 NWC permittees statewide reported

	Raccoon	Bat	Skunk	Fox
Complaints	28,539	9,435	11,837	71
Relocated	17,037	21,933	6,100	22
Euthanized	19,882	1,983	6,574	32



Status of the raccoon population

The price of (over)abundance

Increased predation of other wildlife

- Ground nesting birds, some threatened or endangered [e.g. piping plover, Henslow's sparrow, Kirtland's warbler, prairie warbler, bobwhite, common loon, common tern, Caspian tern] (Bowman & Harris 1980; Robbins et al. 1989; Robinson 1995)
- Reptiles and amphibians, some threatened or endangered [e.g. smallmouth salamander, marbled salamander, Kirtland's snake, copperbelly watersnake, eastern fox snake, spotted turtle, wood turtle] (Harding, 1997; Conant and Collins, 1998)



Status of the raccoon population

The price of (over)abundance

There is no biological reason that MI raccoons need to be rehabilitated and/or released.

Then why are they?

- Public sentiment
- Personal convictions about animal rights

Should public health policy be driven by these?



The tinderbox: Leopold's prophecy meets public (mis)perceptions

"A high density of population—the very thing the game manager is so far usually seeking to obtain—must be set down as the most fundamental condition favorable to disease". Aldo Leopold, *Game Management*, 1933

In some cases, the public, through no fault of its own, holds perceptions of wildlife biology and ecology that are incomplete or mistaken



Future directions

Raising the bar for rehabilitators

- Minimum training, experience and facilities requirements to receive initial permit
- Continuing education requirements for permit renewal
- Enforcement of regulations (where necessary)



"Each cage shall be tagged ...
with county of origin and date
of capture"



"Live skunks and bats shall
not be possessed"



"Captive animals shall not be allowed to come into physical contact with members of the general public (or) domestic animals"



Future directions

Raising the bar for rehabilitators

- Minimum training, experience and facilities requirements to receive initial permit
- Continuing education requirements for permit renewal
- Enforcement of regulations (where necessary)

Education is the better option

- **Rehabilitators can be an invaluable resource for wildlife & public health if willing to work as partners**
- Outreach to outstanding rehabilitators to act as mentors and leaders from within



Future directions

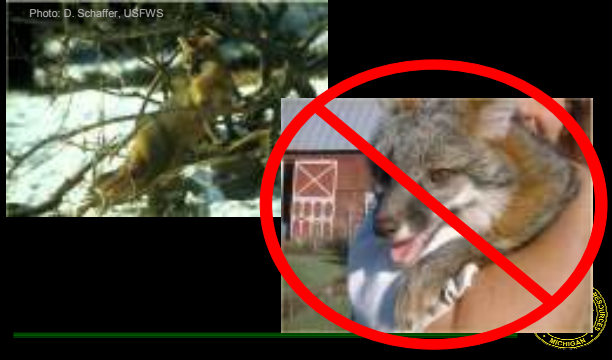
Education

- DNR staff
- General public
 - Potential for outreach through local partners such as nature centers



Future directions

Photo: D. Schaffer, USFWS



Questions?



Dan O'Brien DVM PhD
Wildlife Disease Laboratory, MDNR
(517) 336-5030
obriend@michigan.gov

www.michigan.gov/dnr



Many thanks.



www.michigan.gov/dnr